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*Historical and Bibliographical Notice of Cosmo Viardel.*¹ By
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[Read before the New York Obstetrical Society.]

It is pleasant to turn from the literature of the day, and the strain after novelty, to the literature of the past; to study the musty records of cases where the fathers grappled with the difficulties that beset the practice of to-day; joyfully to recog-

¹ OBSERVATIONS SUR LA PRACTIQUE DES ACCOUCHEMENS NATURELS, contre nature et monstueux, avec une Methode tres facile pour securir les femmes en toute sorte d'accouchemens, sans se servir de Crochets, ny d'aucun instrument, que de la seule main. * * * Ouvrage non seulement curieux, mais aussi tres necessaire et utile aux Chirurgiens et Sages Femmes qui pratiquent l'art des accouchemens. Composé par COSMO VIARDEL, Chirurgien ordinaire de la Reyne, demeurant rue de la Vanerie, proche la Grève. A Paris, MDCLXXI. Avec Approbation et Privilège du Roy.

OBSERVATIONS ON THE PRACTICE OF MIDWIFERY IN NATURAL LABORS, in preternatural cases, and in cases of monstrosity, with a very simple Method for aiding women in every kind of labor, without making use of Crochets, nor of any other instrument than the hand alone. * * * A book not only curious, but also very necessary and useful to Surgeons and Midwives who practice the art of Midwifery. Composed by COSMO VIARDEL, Surgeon in ordinary to the Queen, living in la Vanerie street, near la Grève.

nize the advances of our art, and modestly to learn that professional ardor, success and invention belong not only to our time, but distinguished those who struggled in their day and generation, and left their record before preceding us to the tomb.

Moreover, the deference which these worthy men paid to their predecessors, the labor which they so cheerfully undertook in the preparation and publication of their works, and their confidence in the judgment of posterity, make it just and proper that we should, from time to time, recall their claims to our respect, as the loving hand freshens the monumental record; that we should calmly and impartially judge their many and fierce quarrels, and with "even-handed justice" seek to give to each his due.

Cosmo Viardel succeeded in achieving high position, and in identifying his name with obstetric literature. He raised his voice against the abuse of instruments, and proves himself to have been an expert practitioner; but the faults of his book have offered salient points for adverse criticism by his contemporaries and successors, while the powerful denunciations of Mauriceau have stigmatized him as a dishonorable, intriguing and unscrupulous man. Haller says of him: "*Ordinis omnis ignarus, passim superstitioni indulgens inque medicamentis plurimos;*" and Sue, in his excellent work on the History of Midwifery, says that this judgment is too true to be criticized. Still, although Sue says, further on, that the book is one of the worst that is published on midwifery, he yet remarks that through its puerilities and errors there gleam some new truths and precepts.

It is obvious, therefore, that Viardel has few friends, and hence should his claims to calm, unbiased judgment be received with greater weight. The great name of Mauriceau stands always on record as his accuser, but its lustre is dimmed by the regrettable fact that the death—and, we should judge, the untimely death—of Viardel did not save him from fresh and vindictive accusations from Mauriceau. In the thirty-third chapter of his second book this author speaks of Viardel's death, and then recites a horrible case to prove "his effrontery, temerity and ignorance," though he says, at the close, that the

case is "not introduced to insult the memory of the poor author (Viardel), but to let the public see how dangerous it is to trust to the vain promises of those who have no true knowledge of their art."

Peu has dealt Mauriceau a just rebuke for this conduct, in his "Reply," and has shown, in the body of his work, the true spirit of a gentleman, in reference to views of Viardel which he is justly called on to condemn. Speaking of Viardel's mistake in supposing that the presence of meconium in the passages indicated the death of the fœtus, he says: "This teaching should not be admitted in practice. He who gave it rested it on the faith of his experience, which could not have been great. I wish to believe that if death had not gotten beforehand with him, and had left him the time to acquire more, the public welfare would have led him to retract and acknowledge his error—for such is the duty of whoever undertakes to write." Having published such words as these, Maître Chirurgien Peu, ancien Prévôt et Guide des Maîtres Chirurgiens Jurés de Paris, whose much bewigged and over-anxious face looks out on you from his frontispiece, has the right to say to Francois Mauriceau, Maître ès Arts, ancien Prévôt des Maîtres Chirurgiens Jurés de la Ville de Paris, these hard words:

"When it so pleases you, you spare neither reputation nor modesty nor usages, neither individuals nor constituted bodies, neither things sacred nor profane. Let one take, for example, your thirty-third chapter of the second book in your third edition, where you treat in such a Christian manner an author already dead, or rather where you behave under the influence of a passion that you master so slightly, that dead as he is, and so recognized by you, you do not hesitate to say to him, in your magisterial way: 'Let him attentively read my book, and consider well what I have said in all my 33d chapter, &c. This is the most charitable advice which I can give him.' As if your vanity could not be satisfied by calling more than twenty times, to the tribunal of your doctrine, all the living, without still further calling on the dead." And so on, from many pages more, does the voice of Maître Peu echo down the centuries.

Though his defense of Viardel may have been prompted only by his hatred of Mauriceau, there are many things in his "Re-

ply" which prevent the critic from trusting implicitly to the fairness and truth which may have dictated the case to which we have already alluded as published after Viardel's death.

It is evident to those who read the journals of our day that two centuries have not changed the tendencies to acrimonious debate in high places. Some future critic may reproduce the pungent words which season the controversy regarding acupressure, and recall that the leading surgeon of Scotland belittles and sneers at his colleague, and tears his pamphlets before the class; while the first obstetrician in Great Britain, laden with honors, far removed from the anxieties and disappointments of the struggling crowd below, cannot refrain from irritating his irritable colleague to the utmost by his keen, rapier-like thrusts, and classing the official hangman of Great Britain with Mr. Syme in the category of admirers of their ligatures.

Humanum est errare. The moralizing physician, pondering over his own shortcomings, may draw from these histories the comfort which the Christian draws from the truthful record of St. Peter's failings, and the lapses of the patriarchs.

Viardel recognizes the existence of his enemies in his dedicatory epistle to Mons. Felix, Conseillier du Roy en ses Conseils et premier Chirurgien de sa Majesté. He whines over M. Felix in the most cringing manner which the cringing custom permitted, "that thrift might follow fawning." He says that no one of Felix's predecessors ever equaled him, and that his successors can propose no other glory to themselves than that of imitating him; while no other worthy successor can be found than the younger Felix, etc., etc. Further on he declares that the good opinion of the public is a very small matter to him if the book should not receive Mons. Felix's approval. This indeed may be very true, since he also begs Felix to give the book his protection against the fury of those who will not spare to decry it, and who would not spare the author himself, "had he not the honor of your support, which has served him for a shield and a defense." In his preface Viardel deprecates criticism, because he is not a Maitre Chirurgien, and suggests that it is not the bonnet and the robe which make the Doctor. He declares to his friend the reader (Amy Lecteur) that this little collection of cases is published by the persuasion of his

friends, "seulement pour luy faire part de mon petit travail," only to communicate his little work to him; and finally, before the launch of the work, congratulates himself that he has another shield to defend him against the attacks of his enemies and the critics, in the printed approval of four of the most learned and skillful members of the Paris Faculty, who had kept the book in their possession for four months. To this Mauriceau suggests that they did nothing else with the book than keep it for four months. To show still further that he is not friendless, Viardel outdoes Peu, Mauriceau, Portal and others in the number of his prefatory epigrams, sonnets, and catrains et dizains, composed by the Surgeons in ordinary of the Queen, the Surgeon of Mademoiselle, of the late Monsieur the Duke of Orleans (who probably had leisure), of the Surgeon of Monseigneur the Duke of Orleans, of the Syndic of the Body Surgeons of the Royal Family, who caroms adroitly from Viardel on to M. Felix, and of others.

It is not the purpose of this paper to make a searching study of all the statements made by Viardel, but to glance chiefly at those of clinical and literary interest. Still we notice in passing that he believes that the male foetus begins to move at the ninetieth day, and the female at the one hundred and twentieth; that he combats the idea that the sexes differ in their attitude in utero, of which attitude he had a good idea; and strongly advocates the doctrine that the child may live if born at the seventh or ninth month, or the tenth, but that he rarely survives at the eighth. He abuses those who differ from him, saying that they can find no other way of sustaining their opinion and bringing it to light than that of destroying and tearing that of their master (Hippocrates), "imitating, in that respect, those vipers who can neither commence their life nor enjoy the light of day, unless they tear open their mother's belly, and cause her death." He claims that in cases of twins, where both have the same sex, that they have a common placenta with separate vessels; but that where a female is co-twin with a male, they will be separated by membranes and have each a placenta, "an admirable provision of nature to inspire men from the germ with the laws and rules of chastity." A statement at variance with experience, and what might be

called, in this country, "highfalutin." Monsters, according to Viardel, are due to excess, insufficiency, or admixtures of different semen within the womb. They may be due to the imagination, and he gives the case of a lady of quality who, looking attentively at the portrait of a Moor suspended over her bed, gave birth to a veritable little Moor. An explanation which would scarcely be received in the South. Finally he considers them as the punishment of God, but remarks that this explanation is not the business of the physician, and still less that of the surgeon.

Three cases of monsters are recorded which came under Viardel's observation. In one he considers that the head resembled somewhat that of a fox, and attributes it to the fascination exercised over the pregnant woman by one of the marionettes of the Pont Neuf, dressed with a fox's head; the second case had a long cucumber-like projection growing from the back, and descending to the heels, filled with a fetid water; while the third, well formed in the limbs and body, presented enormous eyes devoid of lids, two large horns in the place of eyebrows, two others in the place of ears, and two more below these directed downward, "*avec un aspect si affreux qu'il faisoit peur à voir.*"

Although his cross-questioning failed to supply him with an exciting cause for the deformity in these last two cases, he yet believes that they are due to impressions not remembered by the patient. Viardel's directions for the examination of the parturient woman and the general laws which should regulate a labor, are excellent for the time, and may be read with profit at present. They seem to me to be suggestive of a practice which avoided the dangers of too great rashness, but erred in recommending that a woman should be left unassisted in labor, even if it lasted four or five days, unless the labor became complicated with some accident, as convulsions, or great loss of blood. This law exposes, of necessity, the patient and the child to all the dangers from delayed, obstructed and powerless labor. In tying the cord, he advises that it be tight enough to prevent hemorrhage, but not tight enough to cause the child pain and convulsions.

The most valuable legacy which can be left to the profession

by those who have not been so fortunate as to make new discoveries, is a collection of well observed and truthfully stated facts. In this respect the work of Viardel can always be read with interest. There is no more reason to doubt the accuracy of his cases than to doubt those of his cotemporaries, while some are illustrated still further by quaint remarks. The fifth chapter is devoted to the description of a case where he succeeded in dilating a vagina so contracted by callosities, resulting from cicatrices, as almost to render the walls adherent. In this case, notwithstanding that his friend the husband had been married for four months, he could barely penetrate just within the external orifice. Having previously satisfied himself that the husband was well formed, Viardel recognized the condition of the vagina, and dilated it by emollients, the introduction of the speculum matricis, and small pieces of sponge tied together so that they could be withdrawn. Conception, however, had occurred before the treatment was commenced, and the labor terminated successfully. In regard to conception occurring under such circumstances, the simple faith of Viardel presents the widest difference from the skepticism and devices recently exhibited, after two centuries, by one who has honorably identified his name with the advance of obstetric surgery. "As for the fact of conception," said Viardel, to his friend the husband, "you need not be surprised at that, since the semen is a substance so at home in the womb, that the latter draws it to itself, neither more nor less strongly than amber attracts straw and the loadstone steel; so that if the womb be well disposed, although the penis may be short, or the semen may not be ejaculated to the womb, the womb will not hesitate to advance and come forward to receive it."

In his next case, Viardel describes an arm presentation which he replaced, and finding the head above, and the pains favorable, he put the head in a favorable position, abandoned his idea of podalic version, and left the case to nature, with success. An excellent, clear headed and well managed practice. In this, as in other cases, we find him attending to the strength of his patient before delivery, and giving eggs beaten up with wine.

An interesting case of placenta prævia, with belly presenta-

tion, follows, in which he removed the placenta first, and then the dead child by podalic version. He states that he once withdrew a living child under these circumstances, which lived three days, although puny.

A case is described in which a fleshy mole, the size of the first, was mistaken by the midwife for the head, and delivered by him before the child, which latter he delivered by version, in accordance with Guillemeau's rules.

The ninth chapter is devoted to a case of supposed dropsy in a demoiselle, sent him from the country by a physician, in whom, by abdominal manipulation, he recognized a movement which, he says, "is not met with in dropsy." He took care of her subsequently in her confinement, and he states that "he does not know that this demoiselle had any bad intention; but the case may serve as a little warning to many midwives and surgeons, who might be blinded by a desire for gain in a similar chance, and do, perhaps, things which are not the duty of a Christian."

In all which M. Viardel presents himself as favorably in the nineteenth century as in the seventeenth.

Apropos of a case in which the redoubtable Mons. Felix himself sent Viardel to the wife of an officer, who had been, during eight days, kept by a midwife in the belief that she was in labor, and where there was no labor for three weeks afterward, Viardel makes some excellent remarks on the differential diagnosis of labor pains, and the disadvantage of too heady a prognosis. Passing over a case where he allowed a breech presentation to go on uninterruptedly, we come to one of face presentation, which demands my sincere admiration. Recognizing the presentation, and placing a compress over the face attached to a string for ready withdrawal, Viardel carefully depressed the chin by pressing on the face, forehead, and then the occiput, until he converted it into an occipital presentation. In a few practical remarks he states the risks from faulty diagnosis and from dislocation of the jaw by too great pressure on the jaw.

The 17th chapter describes a twin case, in which the after-birth was so adherent that he carried a great deal of butter within the womb, and administered sternutatories. When the

afterbirth came, complete inversion followed, which was at once replaced by Viardel, who describes a terrible case of the same class, where a midwife pulled on the inverted womb until the death of the mother.

In the 18th chapter he describes his examination of a woman who had died suddenly undelivered, in which he mentions the attitude of the foetus in utero, and recognizes fluid in the bronchi and pericardium.

In the 20th chapter he gives a case of prolapse of the impregnated womb at half term, which he replaced, and kept up by a pessary. She went through her pregnancy, but the prolapse recurred when the pessary was taken out toward the close, and she demanded much care in the labor. In these cases Viardel would use a cork pessary with holes, or, after confinement, a roller left within the vagina, the hips being elevated, and subsequently astringents.

In chapter 21st, a lady of his acquaintance sent him an unmarried woman, four months pregnant, with chancres and burning during micturition, and with nocturnal pains along the arms and legs. In these cases Viardel argues in favor of baths, and a mercurial treatment at once; and after this woman had been well bathed she was salivated (*flux de bouche*) for a month. She recovered, and a lusty baby was born. Posterity has confirmed the principle for which he contends.

The 22d chapter describes the case of a young married woman whose husband proposed to abandon her as impenetrable. She was jaundiced and cachectic. The hymen was firm and fleshy, perforated by little holes which allowed the thinner part of the menstrual fluid to pass. (I understand that thickened, tough fluid was retained.) The hymen was incised, and a tent introduced, when the objection to the wife was removed.

I attended, this winter, a confinement preceded by somewhat similar conditions.

Two cases of funis prolapse are given. Delivery was effected by version, and Viardel remarks that he has never seen a child delivered living in this complication.

The 24th chapter describes the death of a woman before delivery, where he delivered the child by Cæsarean section

(during the time required for an Ave), which was baptized, and lived a half hour.

Viardel does not tell us that he himself could not therefore entirely dispense with instruments, but the success in this rare and unusual contingency is greatly to his credit.

In the 25th chapter he speaks of a case of puerperal eclampsia in a woman who had been in labor two days and two nights. These, he says, he quieted promptly by some drops of the oil of amber in wine, when he advised that she should be let alone; but he was obliged more than twenty-four hours afterward to pull the child away with his fingers in the axillæ. Gangrene of the vulva and recovery followed. Child born dead.

The uniform success which he claims in the treatment of gangrene of the parts by the remedies which he describes, may be rendered a little doubtful by the details of a remarkable case in the 26th chapter, where a woman, aged 47, illegitimately in the family way, and probably for the first time, had been eight days in labor before sending for Viardel. He found the parts narrow, the bladder and rectum so pressed on that they could not be emptied, the parietal bones squeezed together and through the scalp. He twisted off one parietal bone with his fingers, and then forcing these in he broke up the brain and then withdrew the head with his fingers under the jaw, and subsequently the body with his fingers in the axillæ.

He says that his remedies stopped the gangrene of the vulva, but that she died in three days, the afterbirth only coming away the night before. Among the remedies which he recommends for aiding the delivery of the afterbirth may be found a drachm of the powdered afterbirth of another woman.

The power of his hands, his knowledge of the fact that delivery of the afterbirth before the termination of the labor may stop hemorrhage, and his charity in consultation, are all shown in the thirty-second chapter, in a case where he was called by a midwife who had pulled away the body and left the head in utero. Viardel informed the husband, in kindness to the woman, that the child being putrid, such an accident could not have been avoided. He then introduced his hand, and finding the placenta not quite adherent, withdrew it first, in

order, as he says, to stop the flow of blood. Then, promptly reintroducing his hand, while the midwife held the uterus from above, he got his fingers in the mouth and withdrew the head, "though not without great labor and much sweating." "The most beautiful and most useful of all instruments," says Viardel, "is the one which nature gave us, that is to say, the hand."

In the next case Viardel recognized a shoulder presentation, and that the child was dead. This he determined by passing his hand into the abdomen, where he found the funis flaccid, and the odor of his hands very bad. As the feet were at the top of the womb, he bethought himself that he would force his finger through the putrid abdominal wall and pull on the pubis, which he did until the feet came readily within reach, and so he delivered the child.

"Ah," says Viardel, "the first of all instruments is the hand. Nature must never be violated by superfluous and cruel instruments when all can be done with the hand alone. We are no longer in the time of the Arabs, who invented an infinite number of cruel operations, as well as instruments and machines, which often caused more fear and terror to the sick person than the sight of the torture to a criminal." After citing a case in which, under like circumstances, the head was expelled without assistance except from enemata, Viardel passes on to describe a similar case in which he introduced his hand in the womb and pierced the fontanelle with two of his fingers, after which he forced them down to the sphenoid bone as soon as he had evacuated the brain, and withdrew the head with the hand alone and the aid of sternutatories.

The length of this paper admonishes me to be brief, and I will make but two more extracts regarding the treatment of the lacerated perineum, a subject which has attracted so much attention lately, and his views of the qualifications of a surgeon-accoucheur. He describes medicated applications for slighter varieties, but if all the perineum and septum are destroyed, then he distinguishes the rest into two classes, recent and inveterate.

In the latter he refreshes the cicatrix with a bistoury very carefully, as in hare-lip, and after allowing some bleeding to

take place to prevent inflammation, he then uses a twisted suture in the middle of the wound, and at the two extremities two needle points with a suture twisted above and below. He then applies lint dipped in some balm, and dresses until "the perfect cure." In a recent case, one of which is given, where he operated on the third day, he washed the wound with an astringent decoction, and then sewed it up, from the anus to the commissure, with a suture (à surget). He then ordered that the sides be held together as long as the patient or nurse could hold them, to help the reparative process, dressing it as an ordinary wound—in the case given with equal parts of turpentine and honey spread twice a day on linen. The patient should be bled if inflammation threaten, and in this way he anticipates a recovery in two weeks, as in the case narrated.

I might also cite the care which he took, by injections after difficult labor, to soothe, strengthen and cleanse the vagina, as showing that his claims for great success in curing what he calls gangrene of the parts, were not advanced without great labor on his part to attain the end; but I pass to the translation of a part of his views regarding the qualifications of a surgeon-accoucheur. "He should be well made, of middle age, both to have attained experience and to be able to support the labor and fatigue which he must undergo in his operations. He must be ambidextrous; his hands must be long and slender, and the nails well cut, so as not to injure the womb in his operations. He must be clean in his habits, but always modestly dressed, and not in too swell a manner (*fanfaron*), so that he may have nothing to hinder him. Moreover, he should be virtuous, prudent, wise and well up, a clear-headed man to invent methods on the spot, and to change the presentation when preternatural. He should be gentle in his language and agreeable in his conversation, so as to cheer the patient and encourage her in her suffering, treating her kindly, making her understand that she shall soon be through her troubles, and that he has only come to help and comfort her. But, above all, he must be prudent and discreet. Prudent in prognosis, foreseeing contingencies, so that he may not risk the blame of the assistants. Discreet, so as to guard the secrets confided to him. And we might add that he should know his anatomy perfectly, so as

not to be deceived in his operations—as in removing the after-birth, operating for artificial anus, dividing the frœnum, and other similar operations. In one word, he ought to be patient and charitable, above all to the poor, and not to do his work for lucre and his own profit, but, as said the apostle, for the honor and glory of God, and to preserve his reputation among men.”

It seems, therefore, to the reviewer, that Viardel has shown himself to have been a practitioner of pluck, prompt in his resources; familiar with obstetric manipulations, and very skillful in their use. The simple record of his cases recounts many acts which would do credit to any member of this Society, and are specially interesting at a time when the tendencies of the day are reverting to a more liberal use of the hand in these cases. We incline to the kind and charitable judgment of Peu, rather than to the harsh and vindictive accusations of Mauriceau. If Viardel did die prematurely, then it is certain that so good an operator would otherwise have widely extended his reputation, increased his influence, and purged himself of his errors, with enlarged experience. If, indeed, his experience had really been limited, as Peu suggests, then do his qualities as a skillful operator stand in still bolder relief. At the same time, the experience of the last two centuries has still further taught us to beware of men who, by *ad captandum* titles to their works and the proclamation of extreme opinions, proclaim radical tendencies, which, in medicine, must be seasoned with a spice of charlatanry. He may, possibly, have been intriguing and slippery, and have justified, to a certain extent, the opinion of Mauriceau; he was driven, by his pledge not to use instruments, to expose himself and his patients to dangers inseparable from his false position; but he must also have avoided much of the brutality and malpraxis rife in the days when mutilating and destructive instruments were rashly, unwisely and unskillfully used by the great number of those in practice; and he may have been sustained by the conviction that he was heartily laboring to reach his own ideal, and stem a tide of errors which bore in its depths evidences of evil doing better known to him, perhaps, than we can even now surmise.

VIARDEL'S TREATISE ON OBSTETRICS.

BY
CHARLES GREENE CUMSTON, M.D.,
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With Five Illustrations.

VIARDEL'S work on obstetrics, "Observations sur la pratique des accouchements naturels, contre nature et monstrueux," with five illustrations, is practically known only to those who have given up their leisure time to the study of the history of medicine. The following rambling remarks may be of interest to those engaged in this specialty, because this book exercised considerable influence over the science at the time of its appearance. Although absolutely forgotten at the present time, it long enjoyed a considerable reputation.

Viardel takes the title of Surgeon to the Queen, but not that of Maitre-Chirurgien juré, for the simple reason that he did not obtain the mastership, which alone gave access to Saint-Côme. He served for a long time in the army before establishing himself at Paris. The influence of Félix, the father, First Surgeon to the King, who recognized Viardel's skill, had obtained for him the title of Ordinary Surgeon to the Queen. This post, as we shall see, was extremely useful, because it is well known with what rigor the members of Saint-Côme followed up the illegal practice of surgery, and those familiar with royal privileges may well ask how Viardel could not only practice his profession, but also keep open office. This is explained by consulting his book, which shows that he had an office in the rue de la Vannerie, near the Place de Grève and later in rue Saint-Jacques.

It may be of interest to enumerate some facts relative to the immunities and privileges of the Royal Surgeons. The honors that Saint-Côme gave to the First Surgeon were nearly all fash-

ioned after those rendered by the medical schools to the First Physician to the King. They took precedence in public ceremonies and possessed the right to be the first to partake of communion in those churches frequented by the doctor regents. Their title of Councillor to the King exempted them from a number of legal complications. No matter from what faculty they had received their degrees, they had the right to practice freely in Paris. When they condescended to attend the Faculty of Medicine, dressed in the famous satin gown, the doctor regents went to receive them in great pomp at the bottom of the stairs. And lastly, the First Physician to the King had the right of general surveillance over the practice of medicine in the entire kingdom.

It was about the same with the First Surgeon to the King, at least after the abolition of the position of First Barber, which was bought by Félix and was ever afterwards united with the position that he formerly held. The First Surgeon to the King was consequently a very important person, and it was he who was the ordinary protector of Saint-Côme. His rights were, however, chiefly of an honorary nature, since the corporation of surgeons of the long gown had always preserved its independence, of which it was extremely jealous. Its real chief had always been the Prévôt.

During the reign of Louis XIV., the titularies were Félix, the father, called Félix de Tassy, who occupied the position for twenty-seven years, from 1655 to 1682; Félix, his son, who operated upon his monarch for the famous fistula, and lastly Maréchal, his son-in-law. Beside the First Surgeon, there were the ordinary surgeons, and the quarterly surgeons, whose number was quite considerable. The Queen also had her private surgeons, who enjoyed the same privileges as those of the King, and lastly there were the surgeons of the King's brother.

Roberdeau was the syndic of the Royal Surgeons, all of whom were possessed of the right to practice their profession in Paris without paying the tax of Saint-Côme; but Roberdeau, quite as modest as he was talented, waived this privilege and voluntarily underwent all the examinations for the mastership like any ordinary aspirant. Félix, the son, wished to do the same, and this example was imitated by the majority of Royal Surgeons, except by Viardel, who probably thought himself too old to follow their example. Concerning this he says: "The mastership is an excellent stimulus for young practitioners, in whom it keeps alive zeal for work, but its lack does not prove that he who does not possess

it is of no value, for it is not the robe and the cap which make the doctor." He consequently contented himself with the rights he already possessed, which allowed him to place the coat of arms of the Queen over the door of his office.

Viardel was quite advanced in years when he published his book. His friends, and he seems to have had many, composed in his honor verses and sonnets, which are published in the first part of his book. He was above all an excellent practitioner, and his mind does not appear to be greatly fatigued as the result of reflection on the theory of his art, principally relative to the physiology and anatomy bearing upon it. He remained entirely within the domain of what the ancients had said in this connection. For that matter, his example had been imitated by the majority of obstetricians of his time and one must recollect that the Galenic translation held sway much longer and was much more tenacious than one might suppose a priori. The treatise is dedicated to Félix, the father, First Surgeon to the King and efficacious protector of the corporation of Saint-Côme, and to this dedication of a general nature our author could also add others having a domestic interest. It would appear that he owed him much, as the following quotation will show: "I thank you for the marks of goodness that you have shown me, interesting yourself on occasions which were of extreme importance to me." After this Viardel makes allusion to the pension that Félix had obtained for his son, in the following terms: "To you, Monsieur, I address this treatise as to our common protector; to you, I say, who fills amid universal approbation this illustrious position beside the person of the greatest king in the world, in which rôle none of those who have preceded you have equaled you; and those who shall succeed you will look for no other glory than to continue your work. In your son alone will one find some day a successor worthy to fulfil this noble charge." These somewhat hyperbolic compliments nevertheless testify to his gratitude and to the pride that the members of Saint-Côme, pursued without pity by the then omnipotent faculty, felt in the First Surgeon to the King, who knew how to lighten the troubles with which they were afflicted.

Our author points out the feelings of the surgeons in the following sentence: "Some may, perhaps, be astonished that I have undertaken this work at a time when surgery seems to be hard up, and I myself in danger and in evident peril of being wrecked in the gulf of persecution, considering the tempest which has been raised against me and all my associates." Viardel

admits that he was not involved in any of these difficulties, excepting for his love of surgery, because he was not master surgeon of Saint-Côme: "It is not that I wish to decry in the least the advantages of the mastership; on the contrary, I believe that it is a very good thing to push the young surgeons to the study of good authors, and to induce them to exert themselves in practice in order to be able to acquire this degree." But he then goes on to say: "It is not the cap which makes the doctor, and it does not follow that one is less skillful if one has not passed through all these ceremonies."

And now for an outline of the book, translated from the author's text: "In the first book I speak of labor and the precise time of this, of conception, of the formation of the fetus, of generation of twins, of superfetation, of monsters, of mole with the true signs and indications of pregnancy. In the second book I include several observations that I have made on all kinds of labor, both normal and pathologic, as well as monstrous, with an easy method of performing all sorts of labors without recourse to crotchets, or instruments other than the hand alone. And lastly, in the third book, I speak of the principal diseases which ordinarily occur in women and girls."

I have thought well to quote his chapter on the formation of the fetus as a proof of the influence still exercised at this time by the ancients. In order to be convinced of this, one has only to consult the works of Guillemeau and Viardel.

Viardel speaks of the formation of the membranes from the grossest portion of the semen, etc. The origin of the fetus is due to the formative virtue which is certain, according to Hippocrates, in all the parts of the semen. The development of the embryo is given exactly according to the words of Galen. This is a very characteristic indication of the persistency of the Galenic ideas in many distinguished minds of this time, even of the surgeons, who, by tendency and by calculation, consider themselves much more as innovators than physicians. I give a literal translation of the first chapter of his book, relative to the formation of the fetus.

"There is no one so little versed and clear-sighted in natural affairs as not to know that the two principal materials of generation in perfect animals are the semen and the maternal blood, both of which are destined by their nature to accomplish by the propagation of the species that which they cannot by the preservation of mortal and perishable individuals.

"But it would be in vain that it should desire to be eternal by

means of its principles if it had not found the means to reduce them in power of act, and to accomplish the end for which it has destined them, a thing which could not happen without a propitious spot capable to conceive them, which is nothing else than the womb, this fertile field of human nature, in which the semen having been thrown as in a fruitful earth, it contracts and embraces it in every portion so tightly that one might with difficulty introduce the end of a sound into the internal os, if one is to believe what the divine Hippocrates has left us in writing. The semen being then thrown into and retained within the womb, which is what we call conception properly speaking, wise Nature, who is never lazy, commences at the same time to give rise to this virtue contained and enclosed in this organ, like fire under the cinders, and making the separation of heterogeneous parts encloses the most spiritual portion as if in the center, so that it may equally and more easily communicate its power to all the parts of the circumference, and being animated by the formative virtue, it may commence to trace the first lines of all the parts of the fetus. Consequently the grossest portion of the semen in the separation and agitation of its various component parts, being pushed as far as the circumference and dried by the heat which emanates, and forming a crust similar to that of bread acquired by the heat of an oven, forms the membranes that Nature has destined to serve as an envelope and bed for the little child; I mean to say the placenta, which encloses this spirit within it, for fear, as Aristotle says. in the second book of the Origin of Animals, Chapter IV, that it should escape and separate the delicate fetus from the womb earlier or later according to the nobleness; it is thus that Nature forms the different parts of the fetus one after the other, as takes place in works of art; it acts without doubt in a more excellent and noble way, because the formative virtue being contained in all the parts of the semen (according to the idea of Hippocrates) forms at the same time the essential foundation of all the parts, both internal and external, although several are not in the first place apparent, on account of their minute size, and only become visible successively, because Nature acting equally on all, may nevertheless acquire early or late their perfection, according to their nobility and the necessity of their operations, a fact which incited Galen to divide the entire work of conformation, according to the idea of Hippocrates, into four different stages.

"The first stage is that where the semen is conceived in the womb, and properly speaking is called geniture: this stage is

ordinarily limited to the lapse of seven days, during which Galen believes that the membranes of the placenta are formed, which in man are two in number, namely the chorion, which is the first adherent to the womb by the ends of the vessels, and with which shortly after conception other vessels, both veins and arteries, become anastomosed, which, being dispersed between the folds of this membrane, finally become united in the three trunks, joined together with the urachus to form the umbilical vessels; the other membrane, which composes the placenta, is called the amnios, which immediately envelops the fetus completely, serving as a receptacle for the sweat and urine that the fetus gives off, during the entire time that he remains within the womb, according to Galen, X. de Semine, Chapter VII., to which membranes, if one adds the placenta to the uterine liver, which is nothing else than a porous and spongy flesh made to uphold the ramifications of the vessels of the womb, and to give, according to certain authors, a preparation to the blood, we have what one calls the placenta or the envelope of the child.

"The second stage of the formation of the fetus is when, after the first outlines of the solid parts, the kind of semen disappears little by little, by effusion of the blood which is carried there insensibly, the kind or rather the figure of the semen, and shows itself in the form of a reddish mass of flesh, what one usually calls *νεμχα* or conception; this stage, according to Avicenne, lasts for the space of nine days, during which time one commences to distinctly see the three principal parts which previously were represented by three little bottles, namely the brain, the heart, the liver."

"The third stage is when the three noble parts, being entirely formed and achieved, Nature commences the formation of all the others, although obscurely represented, which we ordinarily call the embryo, which stage ordinarily lasts for twelve days.

"Lastly, the final stage of all in the formation of the fetus lasts for forty days, during which all the parts are organized, and lasts about eighteen days, during which all the parts receive their final perfection."

In the study of the symptoms of pregnancy, Viardel has also retained those indicated by Hippocrates; for example, the sensations felt by the woman during a fecundating coitus, the facial expression and mental perturbation, the excessive contraction of the internal os of the uterus. He cannot, however, resist remark-

ing, as did Mauriceau, that this hermetic closure must be inconstant, for the simple reason that superfetation can occur.

The indications that may be drawn from the suppression of menstruation, he considers as follows: "The third mark of conception, according to Galen, is when the menstrual purgations become arrested without any cause or preceding disease, because Nature holds back the blood for the formation of the fetus in the womb."

One may also be suspicious of pregnancy: "If the breasts swell and become hard on account of the reflux of blood which takes place in the womb in its veins, for the formation of milk. And lastly, if there occur, as there do ordinarily, during the first months of pregnancy, disgust of food, vomiting, and nausea." The following relates to the movements of the fetus in utero. The fetus, he says, does not move at the beginning of pregnancy, because its constituent parts are too weak or too soft and "it is necessary that the parts of the body and the organs which must move them be not only formed, but they must be hard and dry in order not to break, and so forth . . . when the bones and the nerves have commenced to harden and the membranes and ligaments to dry, then it commences to move, namely, male children at three months, according to Hippocrates, and female children at four months."

With so few symptoms, usually of such tardy appearance and so little marked, it is not at all extraordinary that many errors were committed in making a diagnosis of pregnancy. The following case, related by Viardel, of a young woman who perhaps had an interest in concealing her pregnancy, and who, on the other hand, had never felt the movements of the child, is interesting, because it shows the difficulty in which obstetricians of that period found themselves in a type of case so easily diagnosticated at the present time. "I was called to see a young woman who had recently come from the country, . . . and having talked with her, the first thing that she told me was that the physicians of the place whence she came had given her up and she begged me with insistency to give her some remedies to empty the waters and also begged me to put promptly into execution any treatment that might relieve her, all the more so on account of the fact that she could not remain any length of time in Paris on account of an important lawsuit which would oblige her to return to her home, assuring me that I would receive all imaginable satisfaction. After having declared to me all her ideas, and after I had interrogated her several times as to the condition of her

disease, I palpated the abdomen with the palm of my four fingers, but principally in the region of the womb, where I perceived a movement which is not met with in hydrosy. It is to be remarked that this young woman did not believe herself pregnant, because she had felt no movement of the child in the womb, and knowing this and seeing that the patient was obstinate in believing herself hydropic, I persuaded her to take the advice of a physician of this town, who would be more knowing than the physicians of her country; this she did, and there was even a consultation and we concluded that she was pregnant, and we ordered some purgative like manna, rhubarb and other remedies to strengthen her, with soft and mild injections, while awaiting the hour of her labor, which arrived at the natural term, and I delivered her happily of a fine boy, who is still living.

"I do not know whether this young woman had any bad intention, but this should be a slight warning to many midwives and surgeons, who might be blinded by the passion of gain under such circumstances and perhaps do things which would not be exactly the duty of a Christian."

Viardel had certainly the merit of ridiculing the possibility of pregnancies of eleven to twelve months, which de la Motte later on erroneously considered as exact. Like Hippocrates, he admitted that ten months constituted the extreme term of pregnancy "beyond which all children which are born after the death of their father, should not be considered legitimate." He then says that if Aristotle speaks of eleven month pregnancies, "one should not understand by this the eleventh complete month, but only the commencement of the eleventh."

Viardel held to the traditional ideas, "In those things which relate to the situation of the fetus in the womb, I say that, according to Hippocrates, the child is placed in the womb in such a way that, being curled up in a lump, his heels are near the buttocks, both hands on the knees, between which he lowers his head." He was supposed to remain in this position as long as his food was sufficient.

According to Viardel, the fetus plays an active part in expulsion, "as soon as the food begins to lack, turning the head downwards towards the internal os of the womb, he endeavors to escape, a thing which is all the easier because before turning a somersault he ruptures the membranes by kicking them with his feet." We will, however, show how he was an expert in his art and where he considered tradition less and offered personal remarks. One of the

best proofs of Viardel's merit is what he said regarding the treatment of pregnant syphilitic women. The employment of mercury often applied without reason and pushed to an extreme, generally until salivation was produced, had caused this efficient remedy to fall in the esteem of the public and among physicians as well. Bienaise had even written a thesis in Habicot's time to show



Fig. 1. Position of the Child (Viardel).

that syphilis should still be treated with mercury. Obstetricians were extremely fearful that this powerful, but dangerous, remedy might produce miscarriage, and the greater number, including Peu, condemned its use during gestation. Viardel was not of this opinion, and the following quotation is very interesting as far as the history of medicine is concerned:

“As there are many surgeons who make considerable fuss about treating syphilitic pregnant women, I thought that it would not be inappropriate to add here not only my opinion in this present chapter, but to enlighten those who apprehend undertaking the cure of this disease under these conditions, which is frequently met with in the time in which we live, because in the year sixteen hundred and sixty-four, on the fourth of April, a woman whom I knew sent to me a girl of twenty-five years of age, who was four months pregnant, to be treated for syphilis. Having examined her as exactly as was possible, I found that she had several chancres and numerous crusts on the lips of the external orifice of the womb, with clap, accompanied by nocturnal pains in the head, arms, and legs. This was sufficient for me to know that she had the pox, and, for that matter, she had enjoyed life sufficiently to have contracted it. After I had examined her, and having explained to her the nature of her disease, I excused myself civilly to her, saying that my employ did not allow me to treat her, because I was employed in the practice of obstetrics and not in treating such diseases, but perceiving that she had such great confidence in me, I promised her that I would place her in the hands of a surgeon of my acquaintance, very competent in this practice, who would treat her very well, and that I would deliver her when she was at term, and she having accepted my offer, I conducted her to my friend, M. Vitalis, where she remained for six entire weeks, and after having been well prepared by baths, she was given the mouth flux during a month, after which time she entirely recovered a perfect health without being in the slightest incommoded, up to the time that I delivered her happily at term of a fine, fat girl, who is still living, her mother being better than she ever was. From which it is easy to conclude that, if one had waited to treat this woman after labor, it is evident that her child would have been completely infected with this pernicious virus, which once having spoilt and lost the mass of blood, would have completely ruptured all the parts in their formation.

“By means of the good treatment that was given her, the mass of blood was perfectly purified and returned to its former condition, a fact which did not a little contribute to the formation of the child and its health, which would have been notably involved if the maternal blood (which is one of the principles of our generation), had been infected; I do not conclude that for this reason one should expose pregnant women to the bath, this practice would be extremely dangerous; but to know the occasions in which

one may undertake it it is necessary to be guided by the prudent judgment of some skillful physician."

While reviewing the subject of pregnancy, I will transcribe a very interesting case of prolapse of the pregnant uterus in which Viardel gives the indications of the conduct to be followed in order to avoid complications.

"The wife of M. Bonin, a master embroiderer, pregnant with her first child May 22d, 1668, had at the middle of pregnancy a relaxation of the womb which fell into the vagina, the size of an egg; this descent incommoded her to such an extent that she could not walk, which was the reason that her mother summoned me in order to give her some relief. The first thing that I did after having examined her was to place her in position; after which I reduced the womb and placed it promptly in its natural position, introducing a vaginal pessary to prevent it from coming down again. All this happened exactly as I intended, because she had no more trouble up to the time that she should be delivered; because when approaching her term and the pessary having been removed, the relaxation returned, the womb being much pressed by the weight of the child, which obliged her to expel it. The term of labor having arrived and the pains being pressing, I was sent for to deliver her. Having arrived, I found that there were two operations to perform, namely, the delivery and the reduction of the womb, which had again become relaxed. On account of this contraindication, which opposed itself to my designs, I did not leave her the entire day that she was in labor; and the waters having broken, I managed in such a way, that as the pains pushed downward, I pushed the womb upwards with the end of my fingers towards the external orifice until the head of the child was at the vulva, which I received shortly afterwards most happily; the afterbirth was delivered accompanied by a second falling of the womb, produced by the great efforts which had preceded, but I put it back into its position, using the same method that I will enlarge upon in the chapter on relaxation."

What Viardel has to say on natural labor is very short and expressed in about the same terms as are found in Guillemeau's work. For this reason I consider it useless to say much, but I shall, however, translate two passages which relate, respectively, to vaginal examination during labor and to the manner of delivering, and, if necessary, of avoiding such accidents as retention of the placenta.

In the first of these paragraphs Viardel rightly insists on the

necessity of vaginal examination, on the way to carry it out and on the very precious information that this physical exploration gives relative to the progress of labor and the nature of the presentation, but he energetically advises against a vaginal examination being made with the woman in the upright position, which, as he says, exposes her to a premature rupture of the membranes, which, with a few exceptions, should never be allowed. In order to exactly understand this passage, it should be recalled that the majority of midwives were accustomed, in order to hasten labor, to have the patients walk for a long time. On the other hand many pregnant women declared that they were unable to remain in bed and were desirous of lying on a lounge during the entire period of expulsion.

In the passage in which he speaks of delivery, Viardel makes a most extraordinary mixture of absurd things that he had heard of being done by midwives and excellent ideas that he had derived from his personal experience. He commences by showing the numerous complications which occasionally accompany a bad delivery, and he says that in general the placenta falls without difficulty like ripe fruit, but that, unfortunately, it is not always thus. Before arriving at the ultimate argument, our author believes it his duty to give different recipes which were currently employed by the midwives of his time. The patient was in the first place forced to sneeze and, if necessary, certain irritating powders were introduced into the nostrils to produce this effect, and, if these were not successful, the cord was tied around one of the patient's thighs in order to prevent this organ from retracting into the interior of the uterus. Philippe Peu has certainly the merit of demonstrating the uselessness of such practice, as well as the considerable danger to which it may expose the woman, such as severe hemorrhage. In case of adherent placenta, the patient was given a decoction of mugwort or motherwort, but they considered the most potent remedy to be a drachm of pulverized calcined placenta of another woman mixed in a glass of white wine.

Concerning vaginal examination and the means of delivering the placenta after the child has been expelled, Viardel says: "My design being to give to the public those observations which I have been able to make in the practice of obstetrics, upon which entirely depends the first step which should be taken, which is to make a vaginal examination of pregnant women in the proper way, in order to easily recognize if all things which should unite

to render a labor fortunate, are met with or not, I thought I could not do better than by, in the first place, describing the method of vaginal examination which should be employed, in women about to be delivered, before getting oneself ready to deliver them, a thing which is very important to be understood by surgeon obstetricians and midwives, who give themselves up to such practice, since all the rest depends on this commencement, and the good or bad post-partum ordinarily depends on the first means that have been applied from the vaginal examination, since from this we should draw our indications of the labor and the various presentations

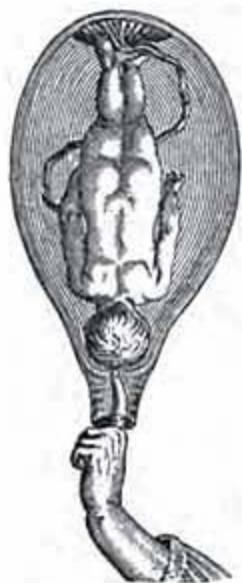


Fig. 2. Digital Examination (Viardel).

of the child, according to the order of Nature, or when it arrives *contra naturam*.

“Now, in order to judge perfectly, it is necessary to place the patient in a proper position, as is required and necessary in all operations, and then afterwards the surgeon or the midwife will take that which is the most proper in order to operate easily; the woman should consequently be placed on the back, the buttocks somewhat raised and the legs placed so that the heels will be as near the buttocks as possible, and after having spread the thighs apart, one or two fingers covered with butter or other oily substance

should be introduced into the neck of the womb, under a cover, carrying them gently as far up as possible, in order to judge the size of the dilatation of the internal orifice of the womb, to discover whether the labor will be prompt or tardy; and afterwards one will draw the indications of all that one has felt, and if some bad presentation of the child is discovered, a prognosis will be made in order to judge of what will be necessary to do, because the indications will vary according to whether the child is well placed or abnormally situated. It is not that one cannot make a vaginal examination with the woman standing, or seated, either



Fig. 3. Podalic Version (Viardel).

on a chair without being in the position mentioned above, but it is to be feared that the surgeon or the midwife introducing the hand at the time when the pain occurs, the membranes bulging and ready to break if only slightly touched, the waters will come through and the child immediately escape, and often fall to the ground, as I have several times seen; this is why I think that it is better to have the patient on the bed in the position already mentioned, all the more so that the neck of the womb opens and dilates better in this posture than in any other.

"The waters then having come away, one should wait for the

fruit to fall of itself, being in perfect maturity, without precipitating anything, although four or five days may have elapsed since the commencement of labor as it frequently happens, unless some accident should arise, such as convulsions or a free loss of blood.

"All concerning that which I present as pathologic, should be governed by the prudence of the surgeon and others versed in this practice to perform his duty and not to defer the extraction of the child.

"As I have done, and as I shall point out in the following chapter, without waiting for the strength of the mother to entirely



Fig. 4. Arm Presentation (Viardel).

disappear, do all that can be done, draw the child by the feet if there are pains, or if there are none, provided that there is a sufficient opening one should find no difficulty; and the earlier this is done, the better, both for the mother and child; for the mother so that she will soon be delivered from the pains from which she suffers, and for the child so as to be able to give him, as soon as possible, the sacrament of baptism in cases of extreme danger and by this means to give him, at the same time, the life of body and soul, observing that if the child is in danger of death or that the labor is perilous, one may sprinkle the first part which presents, whether it be the foot or the hand.

"I would here warn that one should not be too hasty in this operation, and should never employ certain of those who interfere, who are so precipitate in all that they do, that they are no sooner in the room than they wish at once to expedite their operations and return home as quickly as they have come, a condition which very frequently is against the interest, and much to the detriment of the mother and child, which they withdraw in pieces or intact, irritating the womb so much by the violence that they employ that they inflame it so that occasionally gangrene will arise."

We now come to the section treating the means of removing the placenta and those necessary when it is adherent.

"Nature, who is very wise and foreseeing, has not showed herself less careful for the preservation of animals than for other beings, because in the same way that she preserves the greater number of fruits in their first production, enclosing some in shells, others in pods until their perfect maturity, to defend and preserve them from injuries by the weather, thus having no less care of animals and principally of man, she is not only content to have enclosed him during his first formation in the womb, as in a retreat assured for preserving him from external injuries, but she has also wished to build for him a home or particular envelope, composed of two membranes and of a mass of flesh that is called ordinarily in Latin *sæcondinæ*, *patere que secundo a fœtu in lucem editur*, which naturally should never come out of the womb after the child, just as we believe that the pods and envelopes of fruits remain for a certain time attached to the tree after the fruit has fallen to the ground from its perfect maturity, and it is also for this reason that the French have called it the *arrière-faix*, because it is the last burden that the womb becomes delivered of after labor, which, being retained too long within it, is without doubt a useless burden, as well as pathologic, which only incommodes and which we should be careful to deliver as soon as possible, if we are desirous of avoiding a number of accidents which are accustomed to follow the retention of the placenta in the womb, such as loss of blood, convulsion, syncope and other similar ones.

"For this reason, in order to avoid such accidents and to act when they do occur, I have found it timely to add here in what way one should act in order to deliver a woman after labor, and principally if the umbilical vessels having broken, the placenta is retained in the womb and very adherent to the fundus, a condition which very frequently gives trouble to midwives, especially

when it must be sought for without the ordinary guide, which is the umbilical vessels, and since they are not usually the most expert in the knowledge of anatomy, from fear of mistaking the substance of the womb for the placenta itself, they have recourse to the aid of some expert surgeon obstetrician, who will take hold of matters.

"In the first place the patient is placed across the bed as in all complicated labors, and with the greatest prudence and considering that since Nature has not expelled it after the child, it must be that it is adherent at some part of the womb, which complication may be remedied in this way, he should hold the umbilical cord between the fingers of the left hand and shake it here and there with the right hand, all the while pulling upon it gently and requesting the patient to bear down with the same strength that she employed while expelling the child, making her blow into her hands or even producing sneezing with certain powders that he blows into the nose with a goose quill, so that these kinds of concussive movements push the diaphragm and other parts of the lower abdomen downwards, and can compress the womb and oblige it to get rid of this foreign body contained within it. I refer to the placenta, without forgetting to soften and lubricate the womb occasionally by the use of butter that should be from time to time introduced within it.

"This is the manner that I employ for removing the placenta, without any violence, and as I have often practised it.

"But if, after having done all that I have said, the afterbirth remains retained within the womb, it is necessary then to ligate the umbilicus of the child in the manner that I have already given, to cut the cord between two ligatures, to give the child to the nurse so that it may be placed near the fire, and to do all that may be necessary. After which the other end of the cord should be tied to the mother's thigh, while a strong and carminative enema is prepared for her, to which are added a few drops of yellow amber oil, and of which she should take four or five drops in a glass of white wine, or in a decoction of mugwort or motherwort. Castoreum is also a very good remedy to attain this end, as it can also be given in a glass of white wine containing a dram of the afterbirth of another woman, which has been calcined and reduced to powder.

"It occasionally happens that by the use of the above-mentioned remedies, the placenta becomes detached, but it will not come out, so that the method must be changed, and after having detached

the cord from the woman's thigh, one should hold it with the left hand as a guide to the right hand which is introduced to the fundus of the womb, where the placenta is attached and going around this with the ends of the fingers, push it from side to side and place the fingers between the walls of the womb and placenta, in order to detach it from the point at which it adheres, care being taken not to excoriate or wound the womb, and to accomplish this the finger nails must be cut as short as is possible, in order to avoid such unfortunate mishaps.

"But, if by mishap it should occur that the cord breaks by pulling on it too much, then the surgeon or the midwife, having lost his guide and being well versed in anatomy, so as to differentiate between the placenta and the womb, will carry his hand upwards in order to endeavor to withdraw the former.

"But, if the placenta is so adherent to the womb, that by the means of all these remedies and this way of operating, it cannot be extracted, one is free to either draw it out with the hand, as we have already said, intact, or divided in pieces, taking care to avoid wounding the womb, or else to entirely give over the care to Nature, aiding her, nevertheless, by the use of good injections that should be thrown up into the womb, in the way that we have already indicated in Chapter XXVII., as well as with good cordial remedies to fortify the mother and to resist the malignant vapors, because should a small bit of the placenta remain behind, it will cause the same accidents as if the whole of it were retained, and by its own weight it may more easily become detached; and in order not to be blamed by those present, you will make your prognosis for the future mentioning all complications which may happen. . . ."

Viardel then goes on to give those precepts which should be followed for making a good ligature of the cord. One should not forget that the midwives at this time, who were so ignorant in all matters relative to obstetrics, did not even know how to make a ligature of the cord with necessary prudence, and it would appear that some of them at least did not even take the trouble to do it at all. This ligature may perhaps be useless in some cases, but absolutely necessary in others, and I here give in our author's own words the practice to follow:

"Although it may seem that ligation of the cord is not a very considerable operation, and that it is neglected by the larger number of those who mix themselves up in the practice of obstetrics, because one sees it practised by a large quantity of women in

extreme need, who are in no way cognizant of the necessity, nor of the antiquity of this operation, because it was first done by our first parents, long before either medicine or surgery was in vogue among men, at the commencement of the world, this is why I thought it would be not out of the way to here add the manner of doing it before speaking of my own observations.

"I will say consequently, that before undertaking this operation, one should ligate the umbilical vessel, at the distance of two fingers' breadths from the abdomen, with a strong double string, making three turns around the cord, and after having made a knot, one may still make two more turns and then tie again opposite the first knot which has already been made, and cut the cord a good inch and a half in the middle of these two ligatures; and, after having cut it, one should do as I do, placing a small compress, which, when forgotten, frequently causes the death of the mother; I have wished to add this at the end of this chapter without shocking anybody, but only to insist that one cannot take too many of these precautions and act with too great prudence in this operation, as will be seen in the commencement, but to act with wisdom, since life and death, both of the mother and the child, very frequently depends upon our good or bad conduct in the carrying out of this operation."

Besides retention of the placenta, Viardel recognizes as causes of many deaths, unfortunate labors which have produced extensive laceration of the perineum, contusions of the cervix which become gangrenous, and mistakes on the part of the midwives, who are ignorant as to how the placenta should be attended to. He recommends the use of injections, the good effects of some of them being easily explained by the antiseptic properties of some of their components. I have thought it interesting to translate this chapter and add, also, a paragraph relative to abscess of the breast. The want of disinfection, drainage, etc., caused collections of pus in the mammary glands to be far more dangerous, and especially more rebellious than at the present time, and persistent fistulæ were not at all infrequent.

"Like all beautiful fruit, that is seen hanging on the trees, and does not always come to perfect maturity on account of the continual movement which happens to it by external injury, which frequently causes death of the tree and the fruit, likewise a pregnant woman is subject to a large number of accidents, both internal and external, which frequently cause severe disorders to her person and her fruit; to her person, by the cacochymia or

plethora, by the narrowing of the passage in the young, by the dryness of the same parts in the older. From all this many accidents are apt to accrue, such as excoriations of the cervix or the fundus of the womb, because one has wished to pull the placenta with too great violence in order to detach it, sometimes even piecemeal, a practice which should not be undertaken, because it would be much better to let it remain and not to pull upon it with too great violence, as I will point out in a chapter which treats of this matter; because the womb is often irritated and inflamed by the disorders caused by the exit of the child, and sometimes by the violence produced by the hand when it has been introduced by force, a thing that one is often obliged to do in order to prevent accidents which occur, and which causes great inflammation and sometimes gangrene and sphacelus, and afterwards death; which arises from the negligence of young midwives who, after having delivered the woman, do not give orders to the nurses to watch for accidents which happen, and to avert them; and one should use injections into the womb two or three times a day with some proper and specific remedy, which may resist decomposition, that can be recognized by the cadaverous and stinking discharge which occasionally comes on in twenty-four hours; and, supposing that it has already occurred, one may remedy it in this way, beginning with injections which should be made with a decoction of mallows, pellitory, mercurial, motherwort, mugwort, chamomile, and melilot, of each half a manipule, which should be boiled together in three pints of water; and in a pint of the acolature, one should dissolve an ounce of myrrh, one ounce of aloes, two ounces of honey with half a septier of good spirits of wine, and give an injection three times a day into the womb, raising the buttocks of the patient as much as necessary in order to have it retained with greater ease, holding the labia together for a certain time in order to prevent it from escaping.

"But, if gangrene of the cervix of the womb arises, it should be scarified in several different points longitudinally and until the blood flows, then insert several rolls of lint attached to a string, which should be left hanging outside in order to withdraw them with greater ease; a sponge may be used, if one so wishes, soaked in phagedenic water, to which is added some alcohol, or spirits of wine, or one may infuse myrrh, aloes, and aristoloch in alcohol, in which the lint or sponges may be soaked, and with which the neck of the womb should be filled, previously having washed it; one may also use egyptiac with the salt dissolved in alcohol.

"This is the manner by which such accidents may be remedied, to which you may add the employment of cordial remedies, which should be prescribed by the physician, or else, in his absence, you will order a drink made with a handful of barley, dog's-grass, and the root of scorzonera and licorice for the ordinary drink, and, if there is no fever, a little white wine may be given, in order to resist the vapors which rise from the womb, and which facilitate the exit of the discharges, and afterwards you will dissolve half a scruple of confection of hyacinth and alkermes in a glass of the tisane, which she should take evening and morning, on an empty stomach, observing that the drinks and remedies should be tepid when taken for fear that they may give rise to uterine pain."

With the maladroitness of midwives and the inexperience of many obstetricians, lacerations of the perineum were far more frequent than at the present time. As soon as the head had been delivered many surgeons precipitated the labor by forcibly drawing down the arm without waiting for rotation of the shoulders, in order to extract the fetus hurriedly and to show their great skill. One should also remember that both hands were introduced into the vagina in order to direct the head to better advantage during its exit, as they said. Dionis at a later date when he wrote, still recommended this maneuver. Again a badly performed version frequently resulted in severe laceration of the perineum, and Peu mentions a case where the vulva was completely obliterated by extensive cicatrization. More frequently enormous cavities remained, in direct continuity with the vagina and rectum. I append what Viardel has to say on this subject:

"As it is quite a frequent thing during labors to see some contusions and lacerations of the womb, no matter how careful a midwife or a surgeon accoucheur may be to prevent them, and since even, either on account of the narrowness of the passage or other causes, tears and nicks of a considerable extent very frequently occur, principally at the lower portion of the external orifice, in order to entirely end this little treatise on diseases of women I thought it would not be out of place to here give my opinion and the manner of remedying these things.

"*Causes.*—One should consequently remark that the ordinary causes of such accidents are several; these occur naturally either through the narrowness of the passage in women who are too young, or who are too old, or because the child is extremely large.

"Or it happens *contra naturam* by a vice or bad formation of the

said parts, or when there is a callosity or tumor which prevents dilatation.

Diagnosis.—The way in which the complication has occurred can be easily recognized by considering the above-mentioned causes.

Prognosis.—As far as the prognosis is concerned it is very constant that such contusions and lacerations are often very dangerous on account of the accidents which may follow them, because they are so badly dressed on account of the dampness of this part, which is like a drain for all parts of the body, they may degenerate into ulcers or even produce gangrene by corruption, or if the laceration is large and becomes cicatrized, it may last during the entire life of the woman in the same condition.

“This is why in order to obviate such condition, I say first, that it is necessary to proceed in the same way that I did in the case of a woman in Paris. Namely, that if there are simply some contusions or nicks of slight extent, they may be washed with a decoction of agrimony, barley or roses of Provence, or with ordinary wine, in which roses of Provence and flowers of the pomegranate have been infused or boiled, and if this is not sufficient, one may have recourse to the oil of hypericon or to some particular kind of balsam.

“But if it should unfortunately happen that the split is considerable, that the entire perineum and intergluteal space is ripped, as occurred with this young woman, to whom I alluded above, so that the above-mentioned remedies alone are not of themselves enough to cure the lesions, it is necessary under these circumstances to find out if the laceration or tear is recent or inveterate. Because, if it has been present for some time, the cicatrix should be freshened with the knife, by cutting the skin which has become involved, just as one does a harelip, and after having freshened the borders, they should be allowed to bleed to prevent inflammation and, afterwards, one may make a suture in the middle of the wound and at both ends, using interrupted sutures, tying them above and below; then one applies lint, soaked in some balsam, and the wound is dressed until a perfect cure results. But if the laceration is recent, as in the case of the young woman that I have spoken about, which had existed for only three days, one should wash the wound with an astringent decoction as I did, and make a running suture, beginning near the anal orifice and extending up to the opening which is natural, where the laceration commenced, placing above some dressings, ordering the

patient or the nurse to hold between two fingers the gluteal slit as long as possible, in order to make the wound still more solid, dressing it like ordinary wounds, bleeding the patient, if necessary, to prevent inflammation; and by this means the wound will cicatrize in two weeks as it did in this young woman, where I used no other remedy than one part turpentine and one part honey smeared over it with a bit of linen twice a day.

"Here is the end of what I have to say regarding the principal diseases of women, that I was desirous of adding here for the persuasion of my friends, as clearly and as methodically as it was possible, hoping some day to treat it more in detail, and make it more ample in remarks and cases that I might meet with in my practice, both in obstetrics and in particular diseases and other symptoms that I might observe, trusting that the whole might be for the glory of God and for the salvation of our fellow beings.

"Diseases of the breasts.—Diseases of the breasts distinctively spoken of are several in number, but my intention here is only to describe those which ordinarily occur to nursing women. I will reduce them all to three kinds, namely: Inflammation, tumor, and ulcer.

"Inflammation of the breasts and its causes.—I commence consequently with inflammation, as it is the most general disease, which can happen to all kinds of women, whether they are pregnant or not. Inflammation of the breasts takes place in two ways, namely, either by too great a quantity of blood, and principally if it is heated, or by a too great abundance of milk, which becomes coagulated in the breasts and often goes on to suppuration.

"Its differences.—The first kind of inflammation caused by the blood may arise in girls and widows just as well as in married women. The second is distinctive and is peculiar to pregnant women and those who have been delivered.

"Diagnostic signs.—One will recognize that the inflammation is caused by the blood, if the patient is of a sanguineous temperament, which will be noticed by the red color, by the size of the vessels, and by the habit of the body, which is strong and muscular, and especially if the patient has not menstruated, and if she eats much of good food without taking any exercise, or only a little. If the disease comes from the milk, as is usually the case, it will be recognized by the great abundance of the latter.

"Prognostic signs.—As it happens, no matter from what cause, the disease is always dangerous, all the more so because it may

produce a scirrhus, cancer or ulcer, which are very difficult to cure, on account of the delicacy of the parts.

"This is why at the same time that one is called the patient should in the first place be bled, and especially from the foot, and after having removed the fullness, if the fever is not very high, the patient should be gently purged, taking advice of a physician if possible; after which one may resort to topical remedies, which should be in the beginning revulsive. But being afraid to force the womb towards the noble parts, one may consequently make use in the beginning of oxycrat or tepid oxyrodus. But, if the inflammation or tumor arises from coagulated milk in the breasts, one should not use revulsives for fear of rendering the matter more compact, which might then degenerate into scirrhus. Afterwards one should use resolatives like oil of chamomile, lily and other similar ones, and if the matter cannot absorb, suppuration should be aided by digestives, poultices or ointments used in other tumors, and the matter having been let out by incision, or otherwise, the ulcer should be modified and cicatrized with modificatives or astringents like roses of Provence in heavy wine with a little alum.

"However, one should be careful that the nursing woman should not give the breast to the little child, the more so as by this means the humors will be drawn more to the diseased part and principally if the pain and inflammation are considerable, otherwise one will allow her to do so, but with great gentleness.

"*Cure of ulcers of the breast.*—As it ordinarily happens that half of the tumors degenerate into ulcer after suppuration, it is necessary after having spoken of inflammation and tumor of the breast to say something of ulcers which follow.

"*The causes.*—I consequently say, in the first place, that ulcer of the breasts more frequently happens after an inflammation or tumor of this organ, or from some contusion from a blow or pressure on the part, or by some fluxion or discharge, or the transportation of some acrid and corrupted humor.

"*Diagnostic signs.*—It is a disease that one may recognize by a simple inspection of the diseased part, and especially if it follows a tumor and inflammation.

"*Prognosis.*—The ulcers which arise in the breasts are extremely difficult to cure, because this part easily receives the excrements, being glandular and weak in its nature. Also on account of its too great humidity, which frequently delays the exsiccation and cicatrization of the ulcers and prevents the cure.

"The cure of ulcers of the breasts.—To undertake the cure it is necessary in the first place to cleanse the ulcer with hot red wine and some alterative, and after having preceded the general remedies, but principally purgation, in order to remove the cacochymia, and by this means it will be consolidated and cicatrized. One should take gall nuts and cypress, ten of each kind, roses of Provence and bark of the pomegranate, a half a fistful, with half a maniple of sumach; you cook all in heavy red wine and foment the part, or you may thicken it to the consistency of honey and apply it on the ulcer with lint. Wine plaster and gray ointment with diapompholigos are excellent for cicatrization and bring about complete cure.

"On fissures which arise in the breasts.—After having spoken of ulcers of the breasts, it is necessary to add a few words relative to fissures or slits which arise in the nipples. One should know that fissures or chaps arise very frequently in the nipples, as well as in the lips and other parts of the body.

"Their causes.—Fissures of the nipples arise, either from an internal cause, or from an external cause; they arise from an internal cause when they are produced by some acrid and caustic serosity. They may also arise from some excoriation or injury. They are recognized by the sight alone. But there is some danger that they may degenerate into ulcer, and it is for this reason that they should be dried and modified with white wine and rose water and afterwards lead ointment or fresh butter should be used; or with an ointment composed of oil of sweet almonds, wax, mucilage of the seed of psyllum and quince."

After this Viardel draws attention to a complication which occasionally occurs after labor, namely, inversion of the uterus. Although all the treatises on obstetrics of this kind warn midwives not to pull blindly on the cord, these precepts were far from being always observed, and I here give Viardel's recommendations as to how to act when this complication arises.

"Having now to speak of relaxation and prolapse of the womb, I have thought, in order to avoid confusion and to establish order, which is the soul and the torch of all sciences, that it was necessary, in order not to confound the morbid movement with the natural, to say, in the first place, something of the womb and its movements.

"It is for this reason that one should know that by womb we understand that part of the female body which by Nature is destined to receive the semen, to foment it and to reduce its power

to act, that is to say, to place it in such a manner in all the parts that it can form another animal. And it is for this subject that the greater number of philosophers have spoken of it in quite a particular way, because Pliny says that the womb is like a fertile field of human nature, and not without reason, because, like all seeds of plants and trees remaining sterile and without producing anything, if they were not in the first place received into the earth to germinate there, which is like the universal womb of all nature. Consequently, the seed of animals, although fertile and well disposed, if it is not received into the womb, remains deprived of its action, which is nothing else than generation. And it is without doubt this reason that makes the womb desire it and become agitated with various movements, because it comes forward in order to receive the semen if necessary, and if it sees that it is destitute of it, it sometimes mounts upwards, and, by this variety of movement, produces numerous symptoms, which caused Plato to say that it was like an animal enclosed in another animal. But being desirous of considering this matter more in detail later on, when speaking of pale color and other symptoms which frequently arise in women and girls, I will content myself, for the present, with speaking of the prolapse of this organ and the means to remedy it.

"This is why, if a surgeon happens to be called to remedy such an accident, he should treat it in this way: He will first place the patient on her back across the bed, having the buttocks a little higher than the rest of the body and the thighs spread apart as in labor and, having placed the patient in this position, he will bring three fingers together and push the womb with a cloth dipped in tepid red wine, joining his fingers together in the form of a pessary, telling the patient to hold her breath while he should do everything in his power to push the womb into its natural position and to retain it in this state by the use of some pessary if the prolapse does not occur after a labor, as you will see by the following case.

"But, if the prolapse arises from a labor, it should be remedied in the way that I did to this woman, who gave birth to two children of whom I have spoken above, namely, by placing a piece of linen over the entire prolapse and joining the five fingers together in the form of a pessary, it is to be pushed into its natural position, having the woman hold her breath and having, in the first place, placed her in a proper position . . . leaving the woman in this situation for a certain time, without, however, constraining

her and allowing her only to extend the legs, and making her abstain from speaking as much as possible, from coughing or sneezing, and other similar concussive movements, because, by these, the diaphragm being pushed downwards, compresses all the parts of the lower abdomen, and, by this means, a second prolapse of the uterus may occur; this is why, in order to avoid such an accident, a piece of linen rolled up should be inserted and pushed as far upwards as possible toward the internal orifice of the womb, as much for preventing the prolapse from recurring as to receive the lochia, allowing it to hang outside in order to withdraw it, as is necessary.

"This does not mean that one cannot use a hollow cork pessary if one wishes, which is covered with wax; but the patient in whom I performed this operation remaining in bed, I thought that it was not necessary, nor to use oil for the reduction as some recent author has recommended, because all greasy remedies which relax the parts are absolutely contraindicated, and still less astringents, which contract the internal orifice of the womb and prevent the exit of the lochia."

In Viardel's time the great ignorance of the midwives, the imprudent audaciousness and the want of skill of many surgeons, resulted in a large number of cases of dystocia. He mentions some cases of difficult labor which he treated with great skill and show that he was a man of great resource and experience. Viardel rejected the use of the crotchet, which was used at that time with fearful abuse, and he was a partisan of mild measures, resorting to the embryotome only when he was absolutely obliged to do so. Let me recall here that he was no more favorable to the Cesarean operation done on the living than were Philippe Peu and Mauriceau. The case of Cesarean operation mentioned in his book was performed on a woman who had just died. Here are some of his cases of difficult labor, the first of which is a face presentation:

"One of the unfortunate labors is when the child's face presents foremost in the passage; if this is not promptly remedied all the efforts and all the pains of the mother are frequently useless, so that she will not be happily delivered, if she is not promptly succored, because the child runs the risk of smothering in the passage, all the more so that the pressing pains, pushing the body of the child downward, cause the neck to be bent backwards and the head as well. Now, the true means to resort to in such an

accident are those which I employed during a similar labor that I have described at the end of this chapter.

"In the year 1669, during the month of September, I was requested to deliver the wife of M. Nicolle, a tapestry maker, living on Rue Beaubourg, who had been in labor for two days, and when I had arrived at the house I asked Madame Alexandre, the midwife, what presented, and having made a vaginal examination, I found that the child presented with the face first in the passage; this having been well and duly examined, I placed myself in position to succor the woman and save the child in this way. First I introduced my hand carefully into the neck of the womb, joining my four fingers together and pushing back the face little by little without wounding or disturbing the child in any way, with a compress that I had placed on the extremity of my fingers, allowing it to hang outside the neck of the womb, with a tape attached to the said compress in order to be able to withdraw it more easily when I should have pushed back the face, and I slid my hand gently along the face, as far as the posterior part, that is to say the back of the head, having reached which I endeavored to gently lower it, until the child's chin touched the chest, and, by this means, I placed the upper part of the head in the passage, that is to say at the internal orifice of the womb. This is the means and the method which I employed in the practice of this labor, which, although being difficult, did not prevent me from succeeding as I desired.

"I would add, however, another means by which one may undertake a similar labor, which is as follows: You place your finger in the child's mouth, lowering the lower jaw, or to better extend the chin, in such a way that the end of the latter may touch the sternum.

"I will tell you, nevertheless, that the first method that I have already described, the one which I employed, is the surest and the most certain, from the fact that by placing the finger in the child's mouth, to lower the lower jaw towards the sternum, one runs the risk of dislocating it, a condition which may arise. One should always take care not to wound the child with the ends of the finger when the face is being pushed back, a thing which sometimes happens in these labors. This is why I think it proper that one should use the compress that I have invented and which I have employed quite favorably in this kind of case, to push the child's face gently back and without making any contusion or lesion of the latter, as quite frequently happens on

similar occasions, where the child appears afterwards all livid and injured; furthermore, I would say here that young midwives can sometimes be misled in similar labors, taking the cheek of the child for the buttocks and thus believe that it presents in another posture, which in reality it does not, and on account of this fact they should diligently take care to make a vaginal examination two or three times in order to be absolutely certain. But if, in spite of their exactitude, they still doubt as to the situation of the child, they should send for some surgeon who is well versed in this practice, for fear that they might do something erroneous."

The following case is one of breech presentation and is entitled "Un accouchement que je fis, dans lequel l'enfant présentait le cul, que je reçus en cette situation en l'année 1669."

"The tenth day of April, the wife of M. Boulot, living in rue Saint-Antoine, was at term and in pressing labor pains; her waters had just broken when the child presented in the passage, the backsides first, for which reason I was sent for to deliver her. As soon as I had arrived at the patient's house, I made a vaginal examination and I noticed, having withdrawn my hand, that the fingers which I had inserted in the vagina, were stained a blackish and saffron color, similar to that of the meconium; I recognized from this fact that the child had emptied itself, and, consequently, that it was dead, a fact that I wished those present to recognize, in order to show them that I was not deceived in my prognosis and that things were as I had said, for fear that having come out of the womb one might think that I had killed the child by my operation. Consequently, having observed all the circumstances, relative to both the mother and child, I noticed that the pains increased more and more, so that seeing that it would be useless to oppose Nature by pushing back the backsides of the child, which were extremely engaged in the passage, not being able to insert the hand and considering that it would come down easily in this situation on account of the opening of the internal orifice of the womb, which dilated with each frequent and sharp pain, which obliged me to aid Nature by introducing two of my fingers on each side as far up as the groins, during a strong pain, I drew the child out and the placenta came immediately afterwards.

"It should be remarked that, although I extracted the child in this posture, one should not think that they are all delivered in the same way; in this case one frequently has to go for the feet of the child. After having covered the hand with butter it is introduced into the womb, gently pushing upwards the backsides of

the child, which completely fill the internal os; then one should slide the fingers as far as the groins, carrying the hand along the thighs and legs up to the ankles, and by this means you will find the feet that one may also search for at the posterior part by passing the hand along the thigh and, when a foot is met, it should be drawn out, then one does the same thing to find the other foot: when the hand has them both one should proceed without delay to the extraction of the child in the ordinary manner."

The following is a case of knee presentation: "Among the numerous positions in which the child may present when coming into the world, one of the least difficult to remedy is when it



Fig. 5. Version (Viardel).

presents by the knee, which condition can be remedied in a very short space of time if one is a little versed in the practice of obstetrics, because in all bad presentations of the child, no matter what they may be, we are obliged to search for the feet, which are far easier to find when the child presents by the knees, because they are nearer in this posture than in any other, and one can slide the hand below the calf along the leg towards the ankle to catch them and draw them out in the way that I did to the dame of M. Beaudouin, where I was summoned on December 20, 1668, to deliver her, and whom I had previously seen before the membranes had ruptured, who presented longitudinally, which made me recognize that the child was coming badly

"Because it should be observed that in all labors the waters take on the shape of the part which presents the first in the passage, in such a way that if the child presents by the head, which is the only natural position, the waters, being pushed by the latter, will have a round shape, and if it is the foot or the hand, the membranes will be elongated; in the same way relative to the proportion of the other parts of the body, being careful nevertheless that one commits no error when the child presents by the backsides; because, in this case, the shape of the membranes is quite similar to that of the head, excepting that it is slightly more elongated, or softer, although this sign is not always marked.

"Having noticed this in this woman, whom I mentioned above, I manifestly recognized (when the waters had ruptured) that I was not mistaken in my prognosis, because he was coming with the knees forward. This having been recognized by vaginal examination, I commenced to prepare to succor the woman as promptly as it was possible for me to do, which I accomplished in the following way: I inserted my fingers, pushing the patella of the knee which occupied the internal orifice of the womb, and I slid them along the leg until I caught one foot, and having taken it, I drew it out of the womb and then I inserted my hand along the leg and the thigh as far as the buttocks, and allowing it to slide along the other thigh and the leg, I caught the other foot; and, by this means, being assured that they were two feet of the same child, because one might be deceived when there are twins, in a very short time I happily delivered this woman without any bad accident or danger following either with the mother or the child."

This rapid sketch of Viardel's book is certainly very incomplete, and much more might be said and translated, as, for example, his chapter on monsters, but this would carry us far beyond the intended limits of this paper, which has been written merely to give a fairly adequate idea of the book. I have translated the chapters literally, which accounts for the singular construction and English terms used, as I have been desirous to adhere to the original French text as closely as possible.

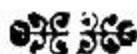
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